

What is claimed is:

1. A poly(tetrafluoroethylene) polymer having:

(i) a melt flow index (372°C; 10kg) of at least 0.1 g/10 min;

(ii) a strain at break at (25°C; 100/min) of at least 125%;

(iii) a tensile strength (150°C; 100/min) of at least 7 MPa;

(iv) a co-monomer content below 2.2 wt%;

(v) a peak melting temperature above 315°C;

(vi) a crystallinity below 60%; and

(vii) one or more of the following parameters:

(a) a peak melting temperature below 320°C;

(b) a crystallinity between 30% and 54%;

(c) a melt-flow index (372°C/10kg) below 10g/10 min;

(d) a co-monomer content above 1 wt%.

2. The polymer of claim 1, wherein said polymer has a peak melting temperature in the range of above 315°C to below 320°C.

3. The polymer of claim 1, wherein said polymer has a crystallinity between 30% and 54%.

4. The polymer of claim 1, wherein said polymer has a melt-flow index (372°C/10kg) below 10g/10 min.

5. The polymer of claim 1, wherein said polymer has a co-monomer content above 1 wt%.

6. The polymer according to any one of claims 1-5, wherein said polymer has two or more of said parameters (a)-(d).

7. The polymer according to any one of claims 1-5, wherein said polymer has

three or more of said parameters (a)-(d).

8. The polymer of claim 1, wherein said polymer has all four of said parameters (a)-(d).

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9. The polymer according to any one of claims 1-8, wherein said polymer has a melt flow index (372°C; 10kg) of at least 0.6 g/10min.

10. The polymer according to any one of claims 1-9, wherein said polymer has a strain at break at (25°C; 100/min) of at least 400%.

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11. The polymer according to any one of claims 1-10, wherein said polymer has a tensile strength (150°C; 100/min) of at least 15 MPa.

12. The polymer according to any one of claims 1-11, wherein said polymer has a comonomer content between 1 and 1.4 wt%.

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13. The polymer according to any one of claims 1-12, wherein said polymer has a peak melting temperature in the range of 316-319°C.

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14. The polymer according to any one of claims 1-13, wherein said polymer has a crystallinity in the range of 35-44%.

15. The polymer according to any one of claims 1-13, wherein said polymer comprises a co-monomer selected from the group consisting of hexafluoropropylene, perfluoro(methyl vinyl ether), perfluoro(ethyl vinyl ether), perfluoro(propyl vinyl ether), perfluoro-(2,2-dimethyl-1,3-dioxole).

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16. The polymer according to any one of claims 1-13, wherein said polymer comprises a perfluoro(alkyl vinyl ether) co-monomer.

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17. The polymer according to any one of claims 1-13, wherein said polymer comprises a perfluoro(propyl vinyl ether) co-monomer.

18. The polymer according to any one of claims 1-13, wherein said polymer
5 comprises a hexafluoropropylene co-monomer.

19. A composition comprising the polymer according to any one of claims 1-18.

20. The composition of claim 19, wherein said composition comprises at least 20
10 wt% of said polymer.

21. The composition according to any one of claims 19-20, wherein said
composition comprises at least 5 wt% of additives selected from the group consisting
of colorants, fillers, reinforcing matter, blowing agents, foaming agents, and
15 electrically conducting matter.

22. The composition according to any one of claims 19-21, wherein said
composition comprises, titanium dioxide, carbon, graphite, glassfiber, molybdenum,
bronze, or stainless steel.
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23. A blend of two or more poly(tetrafluorethylene) polymers, at least one of said
two or more poly(tetrafluorethylene) polymers being a polymer according to any one
of claims 1-18.

25 24. An article comprising the polymer according to any one of claims 1-18.

25. The article of claim 24, wherein said article is formed at least in part by melt-
processing said polymer.

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26. A method comprising:
melt-processing the polymer according to any one of claims 1-18.

27. The method of claim 26, wherein said method includes injection molding, transfer-molding, melt-blowing, melt-extrusion, melt-spinning, and/or blow-molding.

5 28. An article obtained by the method of claim 27.

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